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Validation of *Malasseziaceae* and *Ceraceosoraceae* (*Exobasidiomycetes*)

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Abstract — Names of two families in the *Exobasidiomycetes, Malasseziaceae* and *Ceraceosoraceae,* are validated.

Key words — *Ceraceosorales, Malasseziales,* taxonomy, ustilaginomycetous fungi

Introduction

Of the eight orders in the class *Exobasidiomycetes* Begerow et al. (Begerow et al. 2007, Vánky 2008a), four include smut fungi (see Vánky 2008a, b for the current meaning of 'smut fungi') while the rest include non-smut fungi (i.e., *Ceraceosorales* Begerow et al., *Exobasidiales* Henn., *Malasseziales* R.T. Moore emend. Begerow et al., *Microstromatales* R. Bauer & Oberw.). For two orders, *Ceraceosorales* and *Malasseziales,* families have not been previously formally described. We validate the names for the two missing families below.

Validation of two family names

Malasseziaceae Denchev & R.T. Moore, **fam. nov.**

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Fungi Exobasidiomycetum zoophili gemmationi monopolari proliferationi gemmarum percurrenti vel sympodiali, cellulis lipodependentibus vel lipophilis. Paries cellulae multistratosus. Membrana plasmatica evaginationi helicoideae. Teleomorphus ignotus.

Genus typicus: Malassezia Baill., Traité de botanique médicale cryptogamique: 234 (1889).

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Zoophilic members of the *Exobasidiomycetes* with a monopolar budding yeast phase showing percurrent or sympodial proliferation of the buds. Yeasts lipid-dependent or lipophilic (excluding the case of *Malassezia pachydermatis*), with a multilayered cell wall and a helicoidal evagination of the plasma membrane. Teleomorph unknown.

The preceding description is based on the characteristics shown in Begerow et al. (2000: 59, as a description of *Malasseziales* R.T. Moore, emend. Begerow et al.). *Malasseziaceae* is a monotypic family. The current placement of the *Malasseziaceae* in the system of the ustilaginomycetous fungi and associated yeasts is based on results obtained from molecular phylogenetic analyses (Begerow et al. 2000, 2007, Fell et al. 2000, Sugita et al. 2002, Sampaio 2004, Weiss et al. 2004, Kumar et al. 2007; see also Hibbet et al. 2007, who did not place the *Malasseziales* in any class but just treated them as '*Ustilaginomycotina incertae sedis*').

The genus *Malassezia* comprises lipid-dependent or lipophilic yeasts (excluding *M. pachydermatis,* which does not need lipid for its growth — Midgley 2000, Gandra et al. 2008, Prado et al. 2008). It includes thirteen species found on the host's skin and in the auricular canals of humans and wild and domestic animals (mainly dogs and cats): *M. caprae* J. Cabañes & Boekhout 2007, *M. dermatis* Sugita et al. 2002, *M. equina* J. Cabañes & Boekhout 2007, *M. furfur* (C.P. Robin) Baill. 1889, *M. globosa* Midgley et al. 1996, *M. japonica* Sugita et al. 2003, *M. nana* Hirai et al. 2004, *M. obtusa* Midgley et al. 1996, *M. pachydermatis* (Weidman) C.W. Dodge 1935, *M. restricta* E. Guého et al. 1996, *M. slooffiae* J. Guillot et al. 1996, *M. sympodialis* R.B. Simmons & E. Guého 1990, and *M. yamatoensis* Sugita et al. 2004 (Marcon & Powell 1992, Guého et al. 1996, Midgley 2000, Sugita et al. 2002, 2003, 2004, Hirai et al. 2004, Coutinho et al. 2006, Morishita & Sei 2006, Cabañes et al. 2007, Gandra et al. 2008, Prado et al. 2008).

Ceraceosoraceae Denchev & R.T. Moore, **fam. nov.**

Mycobank # MB 515091

Fungi Exobasidiomycetum hyphis intracellularibus.

Genus typicus: Ceraceosorus *B.K. Bakshi, in Cunningham et al., Mycologia 68: 649 (1976).*

Members of the *Exobasidiomycetes* having intracellular hyphae — characters given by Begerow et al. (2007: 908) for the *Ceraceosorales* Begerow et al.

Ceraceosoraceae is a monotypic family with a monotypic genus. *Ceraceosorus bombacis* (B.K. Bakshi) B.K. Bakshi 1976 causes a disease of an economically important lumber-producing tree, *Bombax ceiba* L. (*Bombacaceae*), in India (Cunningham et al. 1976).

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